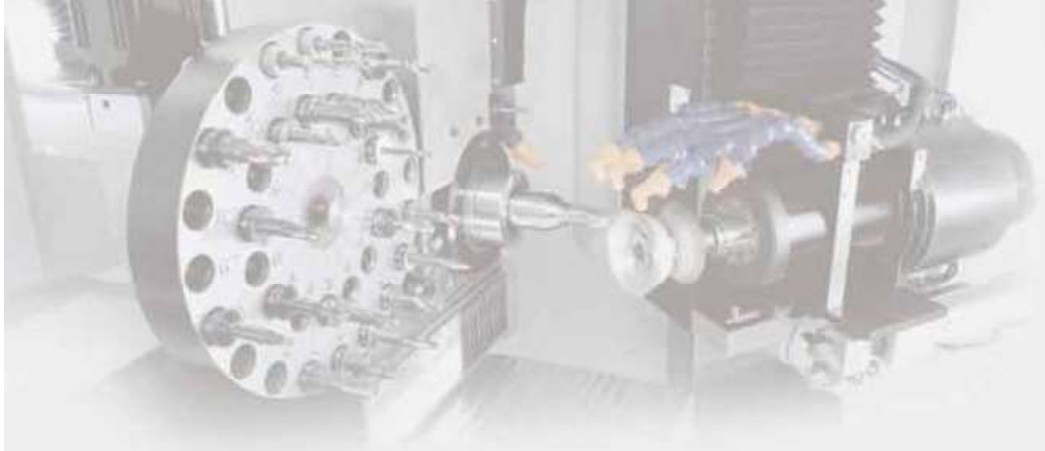

- **CNC Series**
  - GT-520
  - GT-520G
  - GT-530

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PARAGON 創立於 1968

Unparalleled, Choice CNC Grinding Solutions

CNC 5-Axis Tool Grinding Machines

GT-520
GT-520G
GT-530

5-AXIS TOOL GRINDING MACHINE

GT-520

Best Choice with High Cost-Effective for Tool Regrinding and Manufacturing

7.5KW / 12KW Grinding Wheel Spindle

Workpiece Spindle (Worm and Worm Gear)

Polymer Casting Machine base

Applicable Products:

The regrinding and manufacturing of HSS, hard material alloy steel, thread cutting tools. Standardization and module design can reduce the floor space, facilitate easy maintenance, reduces machine standby time as well as the layout. Able to choose grinding wheel package, automatic pick-up changer etc. This allows 7 working days and 24 hours production without interruption, thus greatly enhancing productivity and saving labor costs to achieve automated production targets.

Grinding Range of Workpiece:

1. Tool manufacturing: Ø1~14mm
2. Tool regrinding: Ø2~150mm
3. Max. tool length: 280mm
4. Max. length of tool regrinding: 220mm

GT-520G

The Innovative Products of Micro Diameter Tools and Forming Tools

12KW Grinding Wheel Spindle

Workpiece Spindle (Direct-Drive Motor)

Arched-Column Granite and Polymer Casting Machine Base

Applicable Products:

Medical appliances such as bone cutter, bone drill, bone screws and other special products. World-patented and innovative machine bed with shock absorption structure and optimized machine tool axis motion. The standard accessories of 3 axes machine include close loop Heidenhain linear scale, which enables complicated measuring and geometric machining in one clamp.

Grinding Range of Workpiece:

1. Tool manufacturing: Ø0.2~14mm
2. Tool regrinding: Ø2~150mm
3. Max. tool Length: 250mm
4. Max. Length of tool regrinding: 220mm

GT-530

The Best Equipment for High-Quality Tool Manufacturing and Regrinding

12KW Grinding Wheel Spindle

Workpiece Spindle Direct-Drive Motor

Polymer Casting Machine Base

Applicable Products:

The manufacturing and regrinding of HSS, hard material alloy steel, thread cutting tools. Both standard tool or developing non-standard tool with complicated contour shapes, complex measuring, cylinder fluting, grinding relief angle , end face regrinding and other geometric machining operations can be finished in one clamp, thus ensuring the accuracy of tool size.

Grinding Range of Workpiece:

1. Tool manufacturing: Ø1~20mm
2. Tool regrinding: Ø2~170mm
3. Max. tool length: 320mm
4. Max. length of tool regrinding: 280mm

PARAGON

High-Level Control System and Professional Software

The higher the capability of the control system, the more the potential of the machine can be realized, equipped with CNC control system from Rexroth or NUM has high speed, stability, intelligence and clear function distribution. 15 inch LCD monitor allows entry and control with mouse, electronic hand wheel and keyboard.

Simple Milling Cutters

-Body form: parallel or tapered
-Face form: flat, full radius, corner radius, chamfer
-Helix: right-hand helix / right-hand cutting, left-hand helix / left-hand cutting

Simple Drills

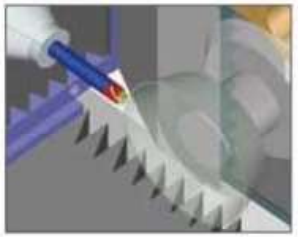
-Points: Spiral point, 4-facet, S4、S6、T3
-Flute and clearance operation
-Up to 3 diameters

Form Milling Cutters

-Helix: right-hand helix / left-hand cutting, left-hand helix / right-hand cutting
-Differential helix
-Separate division
-Separate helix programming
-Cylinder relief up to 10 variants
-Manual grinding path
-Radial reliefs

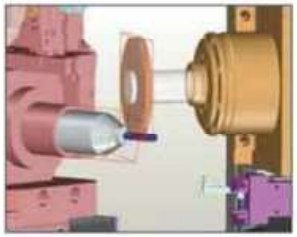
Form Drills

-Points: break point, end mill tip, KM3, KM-V
-Up to 10 diameters
-Step face clearance
-Flute form adaptation
-Separate division
-Manual grinding path



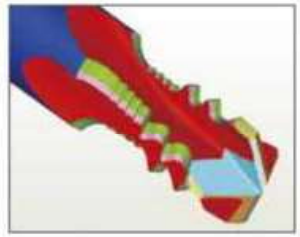
3D Machining Procedures

Easy to check and confirm the grinding procedure and path when operating.



3D Anti-collision Simulation

Use 3D Anti-collision Simulation to allow consistency between the grinding and actual machining process. Able to observe with zoom and rotate function to prevent collision.

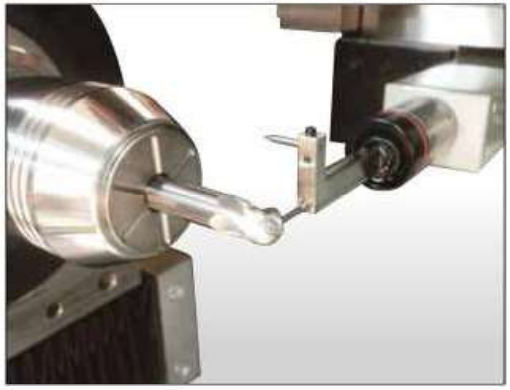


Formed Tool Measurement

Take advantage of the powerful simulation function in the software to quickly and easily develop various kinds of formed tool.

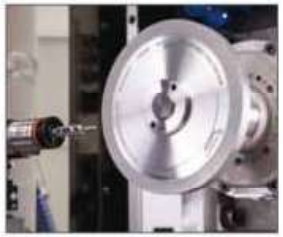
ACCESSORIES

Nimble Automation Accessories



Tool Measurement System (Standard)

Whether it's manufacturing or regrinding, 3D probe can determine the workpiece position and geometry shape such as length, diameter, depth of the helix, pitch and internal cooling location, to automatically calculate the processing data.

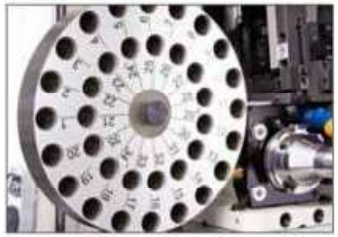


Grinding Wheel Measuring Probe (Optional)

Receive the geometric size of the grinding wheel with rapid measuring, then directly transport to CNC controller. Avoid manual measurement error and reduce the machine shutdown time, thus enhancing productivity.

Automatic Grinding Wheel Changer (Optional)

The three-station wheel changer allows free selection of grinding wheels when the machine is in operation. The quick changing time can shorten the machining process and also raise productivity.



Online Pick-up Changer (Optional)

Rotary type automatic workpiece changer can regrind and manufacture tools required for batch production. B-axis is able to automatically clamp and release the workpiece with only one swing, shortening tool replacement stroke.

Tool Data

• Tool Capacity (with Ø22/Ø22 collet)	35 pieces
• Tool Capacity (with Ø32 collet)	20 pieces
• Tool Capacity Ø3~Ø18	120~54 pieces

AUTOMATIC PICK-UP CHANGER

Can Regrind and Manufacture Various Kind of Tools Required for Batch Production

Palette Pick-up Changer (PLS2)

Place tools in the palette (A) and use pneumatic chuck gripper for loading and unloading, processed workpiece will be deposited in palette (B), remove palette B which contains all finished product to achieve the purpose of batch production.

Tool Data

• Max. tool capacity	300 pieces
• Tool diameter	Ø1~Ø6mm

Palette Pick-up Changer (PLS8)

Uses servo motor to rotate the position of 8 sets of palettes, and every palette can be quickly detached for replacement of tools, achieving the purpose of mass producing similar workpieces.

Tool Data

• Max. tool capacity	300 pieces
• Tool diameter	Ø1~Ø6mm

Palette Pick-up Changer (PLS7)

Uses servo motor to rotate the position of 7 sets of palettes, every palette can contain different tools to achieve the purpose of producing diverse types of workpieces required for batch production.

Tool Data

• Max. tool capacity	84 pieces

Chain Type Pick-up Changer (LS122)

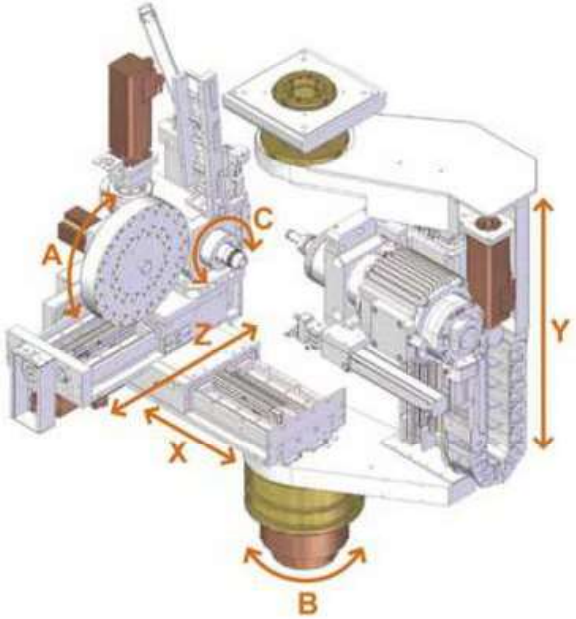
Uses chain for carrying and robot arm to clamp the tool for processing inside the machine.

Tool Data

• Max. tool capacity	122 pieces

MACHINE BASE

New Structural Design Concepts



Innovative machine base design

Double-support B-axis and most distinguished kinematic design to allow 5-axis optimal movement, elevate the accuracy and rigidity of Y-axis and B-axis. The best solution to regrinding and manufacturing all kinds of tools.

Features:

1.Simple design

2.Modular structure

3.Polymer casting granite machine base

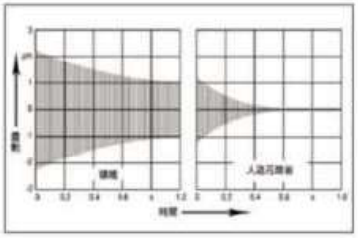
4.B-axis design with high rigidity and accuracy

Machine Base with Poly-Granite

The machine base made of Poly-Granite deplete less energy during manufacturing when compared to cast iron or any other material, conforming to the requirement of green machine tool.

All mold in one design

Embed parts such as tracks and pipelines are all accurately mold into one, greatly enhance the functional and systemic structure.



Anti-damping

The vibration damping capability of the poly-granite machine base is 10 times more than cast iron. Under high speed and temperature, the machine can remain stable without heat deformation for long hours of operation, enhancing grinding precision.

ACCESSORIES

Candle Filter System

Automatic Workpiece Chucking System

Automatic Fire Extinguishing System (UV)

Oil Mist Separator

Grinding Wheel HSK50A (90 /115/ 125)

Workpiece Holder

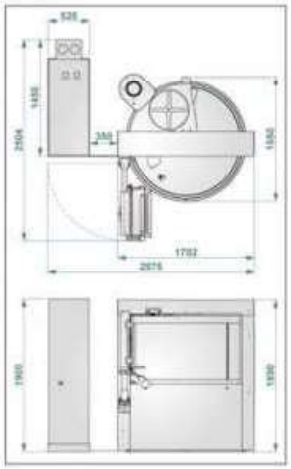
Manual Hydraulic Collet (Ø20 / Ø22 / Ø32)

Automatic Hydraulic Collet (Ø20 / Ø22 / Ø32)

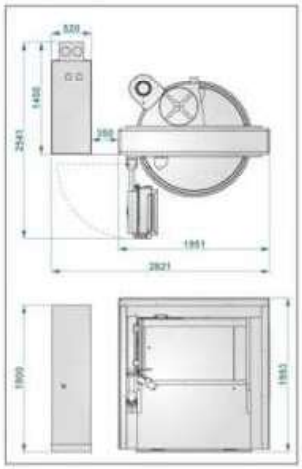
Clamping Sleeve Collet (KMØ20 / Ø22 / Ø32)

MACHINE LAYOUT

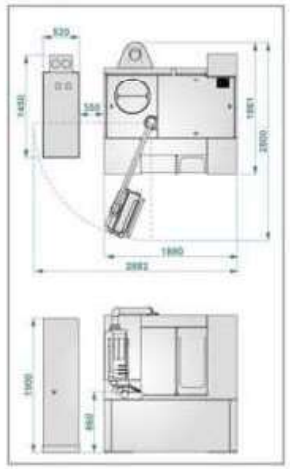
GT-520



GT-520G



GT-530



ACCESSORIES

	GT-520	GT-520G	GT-530
X.Y.Z Axes High Precision Linear Guideways	O	O	O
X.Y.Z Axes High Accuracy Ball Screws	O	O	O
Automatic G.W clamping system	O	O	O
Automatic Workpiece Chucking System	Δ	Δ	Δ
Automatic Tool Measurement System	O	O	O
Oil Pan	O	O	O
NUM Flexium Cabinet System	O	O	O
Electrical Cabinet Air Cooler	O	O	O
15 Inch LCD Monitor	O	O	O
Microsoft Windows Operating System	O	O	O
Rexroth/NUM 5-axes CNC Controller	O	O	O
MTS/NUMROTO Standard Software	O	O	O
MTS/NUMROTO Optional Software	Δ	Δ	Δ
High-performance AC servo motors	O	O	O
Direct-Drive Positioning Platform (B-axis)	O	O	O
Automatic lubrication system	O	O	O
Grinding Wheel Measuring System	Δ	Δ	Δ
Automatic Grinding Wheel Changer (3 station)	Δ	Δ	Δ
Workpiece Holder	Δ	Δ	Δ
Automatic Pick-up Changer (A-axis/LS122/PLS2/7/8)	Δ	Δ	Δ
Oil Mist Separator	Δ	Δ	Δ
Automatic Fire Extinguisher (UV Fire Sensor)	Δ	Δ	Δ
Automatic Candle Filter System	Δ	Δ	Δ
Heidenhain Linear Scale (X.Y.Z Axes)	×	O	×
Direct-Drive G.W. Spindle	O	O	O
Direct-Drive Workpiece Spindle (C-axis)	Δ	O	O
Rotary Operation Table	O	O	O

O Standard Equipment Δ Optional Equipment × Not Applicable

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SPECIFICATIONS

Model	Unit	GT-520	GT-520G	GT-530
Complete machining max. tool length	mm	210	210	300
Complete machining max. diameter	mm	ϕ120	ϕ120	ϕ150
Measurement system				
Standard (tool measurement)		3D measurement probe (Marposs)		
Optional (grinding wheel measurement)		3D measurement probe (Marposs)		
G.W. spindle (direct-drive) (IP65)	kw	7.5	12	12
Wheel spindle regulator (Forward, reverse rotation)	rpm	0~9,000	0~10,000	0~10,000
Grinding wheels				
Max. diameter	mm	ϕ125mm	ϕ125mm	ϕ125mm
Grinding wheel per clamping arbour		1~4 wheel	1~4 wheel	1~4 wheel
Cooling via cooling valve (program-controlled)		3 valves	3 valves	3 valves
Grinding wheels holders				
Standard (HSK50)		Pneumatic auto. Chucking		
B-Axis / Standard		Direct-Drive		
Speed	degree/sec.	112°	112°	112°
Workpiece holders				
Standard		Mechanical manual		
Optional (grinding wheel measurement)		Pneumatic automatic		
C-Axis				
Standard		Worm gears (SK50)	Direct-Drive (SK40)	Direct Drive (SK50)
Optional		Direct-Drive (SK40)	-	-
Wheel speed regulator	rpm	65/2000(opt.)	2000	1000
Controller				
CNC controller		Rexroth MTX micro / NUM-Flexium		
TFT colour display screen		15 Inch		
Tool grinding software		MTS / NUMROTO		
Interface				
Oil mist exhaust unit	mm	ϕ150	ϕ150	ϕ200
Axis travel				
Longitudinal (X-Axis)	mm	310	310	350/420(opt.)
Lateral (Y-Axis)	mm	220	220	230
Vertical (Z-Axis)	mm	190	190	230
Resolution (X.Y.Z-Axes)	mm	0.0003	0.0001	0.0003
Linear Scale		Optional	Standard	Optional
Speed (X.Y.Z-Axes)	m/min	15	15	15
Rotation movement (B-Axis)	degree/sec.	195°	195°	195°
Resolution	degree	0.0001°	0.0001°	0.0001°
Rotation movement (C-Axis)	degree	360°	360°	360°
Resolution	degree	0.0003°/0.0001°(opt.)	0.0001°	0.0001°
Machine dimensions				
Depth / Width / Height	mm	2165x1440x1860	2270x1440x1910	3000x2000x2200
Machine weight	kg	2800	3900	4500
Cabinet weight	kg	600	600	600
Air supply	bar	6~8	6~8	6~8

* Design and specifications are subject to change without prior notice.